REMARKS

Reconsideration of the subject application, as amended, is hereby respectfully requested. In this Amendment, claim 26 has been amended. Support for the claim amendments can be found in the specification as originally filed, for example, at paragraphs 40-41 and 49. No new matter has been added to the claims. As amended, claim 26 is patentable over *Charles et al.* (U.S. Patent No. 6,271,671), even when considered in combination with *Alumot et al.* (U.S. Patent No: 5,699,447).

Before describing the detailed reasons for patentability of the present claims, it should be recognized that claim 26 recites "means for providing an alternating current electrical signal". This is not a statement of intended use, it is a recitation of an element in a claim for a combination that is expressed as a means for performing a function. Such a recitation is specifically authorized by 35 USC 112, paragraph 6. Any theory that an apparatus claim should define an invention solely in terms of its structure has been thoroughly reputed by the US Court of Appeals for the Federal Circuit. One reason for this is that the recognition of the theory implies a distinction between physical structures and the functions they perform, and this distinction is an artificial one. To specify what a structure does is to specify something about the structure itself. Here, the specified structure is one that provides an alternating current electrical signal.

The Office Action cites *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) for the proposition that a claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. While this may be true, it is important to recognize that the *Masham* panel was concerned with a claim where a specified use of an element within the claim was recited in the preamble of that claim. This is not the case in the present application and so the context in which the recited "means for providing an alternating current electrical signal" in claim 26 is not one which is similar to that in *Masham*.

In any event, even if *Charles* were read to teach some means for providing an alternating current electric signal, there is not teaching or suggestion that such "means" (e.g., signal generator 40) are also

configured to synchronize phases of the alternating current electrical signal with image captures of the test structure as recited in claim 26. Nor does *Charles* disclose a processor for generating a first image of the test structure during a first phase of the electrical signal based on detection signals received from the detector, generating a second image of the test structure during a second phase of the electrical signal based on detection signals received from the detector, and processing the first and second images to locate a defect in the test structure.

Alumot discloses a dual-phase approach for inspecting the surface of an article, such as a wafer or chip. *Alumot*, Abstract. The first phase includes optically examining the complete surface of the article by scanning its complete surface at a relatively high speed. *Id.* The second phase includes optically examining specific locations of the article where defects are suspected with a relatively high special resolution. *Id.* As such, the two-phase approach of Alumot refers to a first, relatively low-resolution optical examination of an article and a second, relatively high-resolution optical examination of a specific location of the article. Thus two-phase resolution of optical examination disclosed in Alumot refers to two phases of optical resolution for the inspection of an article and is in no way analogous to the system of claim 26 which is adapted to provide an alternating current electrical signal which is characterized by multiple phases. Nor does *Alumot* provide any teaching regarding synchronizing phases of the alternating current electrical signal with image captures of the test structure or generating different images of the test structure during different phases of the electrical signal.

Consequently, even if one were to combine the teachings of *Charles* and *Alumot*, one would not arrive at the present invention. In particular, one would not arrive at a system that included means for providing an alternating current electric signal, which means are also configured to synchronize phases of the alternating current electrical signal with image captures of the test structure, and a processor for generating a first image of the test structure during a first phase of the electrical signal based on detection signals received from the detector, generating a second image of the test structure during a second phase of the electrical signal based on detection signals received from the detector, and processing the first and second images to locate a defect in the test structure. Accordingly, claim 26 (and its dependent claims) are patentable over the combination of *Charles* and *Alumot*.

The Product Description of a Lock In Amplifier, (Perkin Elmer Technical Note, 2000, hereinafter "Perkin") is cited for teaching a lock-in amplifier that provides an electrical signal that is both an AC and a DC current. Even if true, such teachings are irrelevant inasmuch as claims 29 and 31 have been cancelled.

Claim 35 depends from claim 26 and is patentable over *Charles* and *Alumot* for at least the reasons provided above with regard to clam 26. EG&G Princeton, "Explore the Lock-in Amplifier", is cited for teaching a lock-in amplifier with a frequency range of 0.1 Hz - 200 kHz. However, even if true, and such teachings were combined with those of *Charles* and *Alumot*, the above conclusions regarding a lack of teaching of a system that included means for providing an alternating current electric signal, which means are also configured to synchronize phases of the alternating current electrical signal with image captures of the test structure, and a processor for generating a first image of the test structure during a first phase of the electrical signal based on detection signals received from the detector, generating a second image of the test structure during a second phase of the electrical signal based on detection signals received from the detector, and processing the first and second images to locate a defect in the test structure would remain. Hence, claim 35 is patentable over the combination of cited references.

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